

U.S.S.N. 09/842,613  
Filed: April 26, 2001  
AMENDMENT AND RESPONSE TO OFFICE ACTION

### Remarks

#### Objections to Amendment

Claims 15 and 21 have been shown with the words "further" and "about", respectively, underlined.

#### Double Patenting Rejection

Claims 1 and 11-26 were provisionally rejected under the statutory "same invention" type double patenting as being unpatentable over claims 1, and 11-26 of the copending application Serial No. 09/232,110.

This rejection has been mooted by the Board's decision in U.S.S.N. 09/232,110, denying the appeal. This application is now abandoned.

#### Rejection Under 35 U.S.C. § 112, first paragraph

Claims 1, and 11-26 were rejected under 35 U.S.C. § 112, first paragraph, for allegedly lacking enablement. Applicants respectfully traverse this rejection.

It is unclear why the examiner has underlined the phrase "water-resistant" on the bottom of page 2. The claims in their current form are limited to water-resistant film-forming compositions.

Claims 1 and 19 have been amended to recite that the composition includes a PHA copolymer. Support is found, for example, at page 2, line 35 to page 3, line 2. See also page 6, line 24 to page 7, line 20. The most preferred copolymers are 3HBHV.

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Claims 1 and 19 have also been amended to define the PHA forming the film as "non-crystalline". Support for the amendment is found, for example, at page 3, lines 5-14.

In Examples 1 and 2, paints formed of a composition having 90% by weight thereof 3HB3HV particles and 10% by weight thereof a conventional acrylic film-forming polymer were tested (p. 9, lines 22-29); 67 wt% of the 3HB3HV particles had a density of below 1.18 g/cm<sup>3</sup>. The same paints in which the 3HB3HV particles were replaced with the same amount of the conventional acrylic film-forming polymers were tested for comparison (p. 10, lines 10-13). The paints were allowed to dry at 20 °C to form dried coatings and tested (p. 9, lines 32-36). As the scratch resistance tests shown in Tables 1 and 2 shows, the coatings formed of paints of the acrylic film-forming polymer with no P3HB3HV particles are soft under the scratch resistance test. In contrast, the coatings formed of paints having 90% by weight thereof 3HB3HV particles and 10% by weight thereof a conventional acrylic film-forming polymer are hard. These results clearly establish that the amorphous 3HB3HV particles, rather than the acrylic film-forming polymer, accounts for the formation of the coatings of Tables 1 and 2.

The Examiner's attention is also drawn to the decision of the Board of Appeals in the parent application, U.S.S.N. 09/232,110, pages 7-10. As the Board concludes following its well reasoned analysis of the burden to prove non-enablement, and the scope of the claims, the application fully enables claims of the scope pending in this application.

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Rejection Under 35 U.S.C. § 103

Claims 1 and 11-26 were rejected under 35 U.S.C. § 103 as obvious over U.S. Patent No. 5,451,456 to Marchessault et al. ("Marchessault") or the published corresponding PCT application, PCT WO 91/13207. The Examiner further rejected claims 1 and 11-26 as obvious under 35 U.S.C. 103 over Marchessault in view of U.S. Patent No. 4,016,306 to Miyagawa et al. ("Miyagawa"). The applicant respectfully traverses the rejection.

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*Marchessault*

Marchessault describes latex films formed from polyhydroxyalkanoate compositions at elevated temperatures (100 to 140 °C with 1000-5000 psi) or through the addition of solvents (chloroform and other halogenated solvents, ethylene or propylene carbonate, acetic anhydride, dimethylformamide, and alcohols) (col. 7, lines 24-25, 29-31, and 38-44). As noted at col. 3, lines 59-60, the dried polyhydroxyalkanoate granules used to make the latexes are non-crystalline and the "dried material is crystalline" (col. 3, line 60).

Example 1 of Marchessault describes employing up to 10 parts by weight of the solids of a conventional film forming polymer and copolymers with PHA particles to form a film-forming paint – but not one that forms at room temperature. At col. 6, lines 62-64, Marchessault says to use only between 10 and 50 wt% PHA. At col. 7, lines 20-25, films are formed using a dilute solution of only 15-25 wt% PHA. No where does Marchessault teach using high weight percentages of PHA to make films. The combination of a conventional film-forming polymer with PHA particles, without more, would not lead one of ordinary skill in the art to make paints which forms a film at ambient temperatures. A paint formed of PHA particles would form a film at ambient temperatures only if the PHA particles have certain degree of non-crystallinity (p. 5, lines 3-12). Indeed, in Example 1, Marchessault teaches that when a 21% hydroxyvalerate/ 79% hydroxybutyrate polymer was dried at room temperature, it produced a film "with little or no strength." (col. 8, lines 26-31). Further, Marchessault notes that the latex can be readily rinsed off a surface to which it is applied (col. 6, lines 53-56) and is therefore not "water-resistant," in

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contrast to the claimed materials. Marchessault's films do not fuse at room temperature, but must be heated to cause even moderate fusion (see col. 7, lines 23-25). Marchessault and PCT WO 91/13207 fail to disclose or suggest polymers that have the claimed density (i.e., they are crystalline and therefore have a higher density). These materials, as established by Marchessault, do not form water-resistant films at an ambient temperature.

The claims require that the PHA forms a non-crystalline film when dried. As Examples 1 and 2 of the present application show, the amorphous polyester latex, rather than the conventional film-forming acrylic polymer, accounts for the film-forming property of the composition of Example 1 or 2 containing an amorphous polyester latex.

Marchessault does not teach a composition that is non-crystalline in the form of a dried film. Marchessault does not teach how to make such a composition form a water-resistant coating. Marchessault does not teach the desirability to have such a composition.

In summary, Marchessault provides no motivation or teaching that would lead one skilled in the art to select an aqueous film-forming polymeric composition that forms a **non-crystalline film** wherein at least 60% of the polyhydroxyalkanoate polyester particles have a minimum density of less than 1.02 g/cm<sup>3</sup> and form a water-resistant film at room temperature. Nor would Marchessault or WO 91/13207 lead one of ordinary skill in the art to have a reasonable expectation of success of the claimed composition. Accordingly, Marchessault or WO 91/13207 would not render claims 1 and 11-26 *prima facie* obvious under 35 U.S.C. 103 (*see, Hodosh v.*

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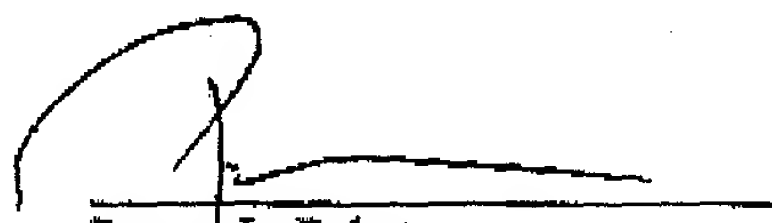
*Block Drug Co., Inc.*, 786 F.2d 1136, 1143 n.5, 229 USPQ 182, 187 n.5 (Fed. Cir. 1986); *see also* MPEP § 2141).

*Miyagawa, et al.*

Miyagawa, et al., teach acrylic compositions, not PHA compositions. As described at col. 2, acrylic polymer is added to an acrylic resin composition. There is no teaching that would lead one skilled in the art to substitute a PHA for the acrylic resin composition.

Allowance of claims 1, and 11-26, as amended, is respectfully solicited.

Respectfully submitted,



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**CERTIFICATE OF FACSIMILE TRANSMISSION**

I hereby certify that this Amendment and Response to Office Action, and any documents referred to as attached therein are being facsimile transmitted on this date, September 16, 2003 to the Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

  
Patrea Pabst

Date: September 16, 2003

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